

# Electronic Cigarettes

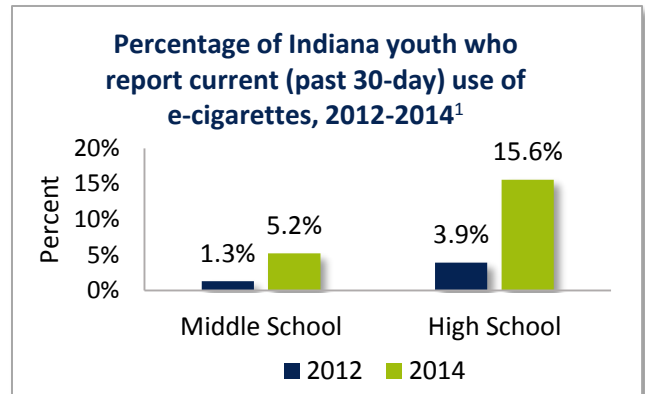
## What are electronic cigarettes (e-cigarettes)?

Electronic cigarettes (e-cigarettes) are battery-operated devices that heat a liquid to produce an aerosol that users inhale. E-cigarettes fall within a broad class of products known as electronic nicotine delivery systems (ENDS), which also include electronic cigars (e-cigars), electronic hookahs (e-hookahs), vapor (vape) pens, and other products.

## Use of e-cigarettes in Indiana and the U.S.

Use of e-cigarettes has increased dramatically in Indiana and the U.S. in recent years.<sup>1,2,3</sup>

- E-cigarettes were the most commonly used tobacco product among youth in Indiana and nationwide in 2014.<sup>1,3</sup>
- Between 2012 and 2014, current (past 30 day) e-cigarette use among Indiana youth increased approximately four-fold, from 1.3% to 5.2% among middle school students and from 3.9% to 15.6% among high school students.<sup>1</sup>
- Nationwide, e-cigarette use tripled among middle and high school students between 2013 and 2014.<sup>3</sup>
- In 2015, 4.6% of Indiana adults reported current use of e-cigarettes.<sup>2</sup>



### Fast Facts:

- E-cigarette use has increased rapidly nationwide and in Indiana.<sup>1,3</sup>
- According to the CDC, e-cigarette aerosol is NOT harmless 'water vapor' and is NOT as safe as clean air.<sup>12</sup>
- E-cigarette aerosols have been shown to contain nicotine, heavy metals, carcinogens, and other toxic chemicals.<sup>4,5</sup>
- E-cigarettes are NOT FDA-approved cessation aids.<sup>12</sup>
- Most adult e-cigarette users also use combustible tobacco (such as cigarettes or cigars).<sup>11,12</sup>
- E-cigarettes have been marketed using tactics that appeal to youth.<sup>12</sup>

## Health concerns about e-cigarettes

### Harmful aerosol constituents and secondhand aerosol

- E-cigarette aerosols have been shown to contain nicotine, heavy metals, and cancer-causing agents.<sup>4,5</sup>
- E-cigarette aerosols also have high concentrations of ultrafine particles, which may exacerbate respiratory conditions and constrict arteries.<sup>6,7</sup>

### Harmful effects of nicotine

- **Addiction:** Nicotine is highly addictive.<sup>8</sup>
- **Impaired youth brain development:** Nicotine use can disrupt adolescent brain development, including parts of the brain that control attention, learning, and susceptibility to addiction.<sup>9, 12</sup>
- **Impaired fetal development:** Nicotine use by pregnant women is toxic to fetuses and impairs fetal brain and lung development.<sup>8,9, 12</sup>
- **Poisoning:** E-cigarette solutions can have very high concentrations of nicotine, which creates a risk of overdosing or poisoning. Nationwide, monthly calls to poison control centers for e-cigarette exposure increased from one per month in September 2010 to 215 per month in February 2014. Over half of these calls were for young children ages five and under.<sup>10</sup>

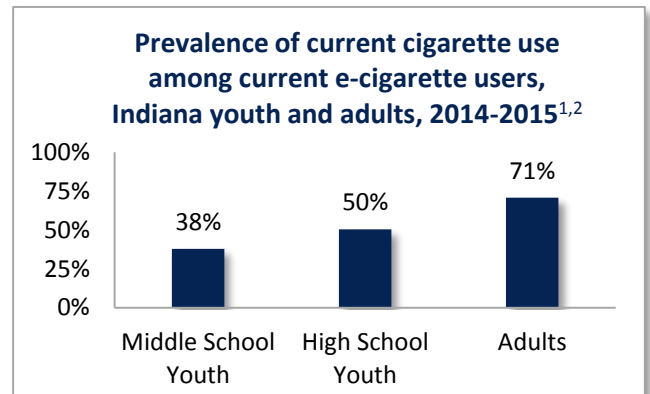


## Dual use of e-cigarettes and conventional cigarettes

E-cigarettes are often promoted as safer alternatives to cigarettes or smoking cessation aids, however e-cigarettes have *not* been approved as safe by the U.S. Food and Drug Administration (FDA) and are *not* FDA-approved quit aids.<sup>12</sup>

### Dual use among adults

- Rather than quitting cigarettes completely, many e-cigarette users continue to smoke conventional cigarettes.<sup>11,12</sup>
- Smokers who use e-cigarettes to cut back on cigarettes but do not quit completely remain at increased risk for disease and death due to smoking.<sup>12</sup>
- Over 70% of Indiana adults and nearly 77% of U.S. adults who use e-cigarettes also report current cigarette use.<sup>2, 11</sup>



### Dual use among youth

An additional concern with e-cigarette use among youth is that it may serve as a gateway to regular use of combustible tobacco (tobacco that is burned to produce a smoke that users inhale, such as cigarettes or cigars).<sup>13, 14</sup> In 2014, 75% of middle school e-cigarette users and 84% of high school e-cigarette users in Indiana had ever tried a conventional cigarette. Additionally, 38% of middle school and 50% of high school e-cigarette users in Indiana also reported concurrent use of conventional cigarettes on one or more of the past 30 days.<sup>1</sup>

## Flavors, marketing, and youth appeal

- E-cigarettes are not currently subject to federal manufacturing, sale, or marketing regulations like those placed on cigarettes.<sup>15</sup>
- Companies currently manufacture and sell e-cigarette solutions in over 7,000 unique flavors, including candy or fruit flavors that may appeal to youth.<sup>16</sup>
- E-cigarette marketing often involves tactics previously shown to increase the appeal of tobacco products among youth, including celebrity endorsements, sports and music sponsorships, and themes that resonate with youth, such as rebellion and glamor.<sup>12</sup>
- Nationwide, 7 in 10 youth were exposed to e-cigarette ads in 2014.<sup>17</sup>

## Public health response to e-cigarettes

Given concerns about the health impact of e-cigarettes, the CDC has indicated that several strategies are appropriate to protect public health, including:

- Prohibiting marketing or sales of e-cigarettes and other ENDS to youth
- Prohibiting e-cigarette and other ENDS use in indoor areas that are smoke-free to preserve clean air standards, support enforcement of smoke-free policies, and encourage smoke-free social norms
- Sustaining comprehensive statewide tobacco control efforts to reduce combustible tobacco use.<sup>12</sup>

## Resources for tobacco cessation

E-cigarettes and other ENDS are not FDA-approved cessation aids. However, other methods, such as counseling and FDA-approved medications, have been shown to help tobacco users quit successfully.<sup>18</sup> Tobacco users who want to quit should contact a healthcare provider for assistance and call the Indiana Tobacco Quitline at 1-800-QUIT-NOW or visit [www.QuitNowIndiana.com](http://www.QuitNowIndiana.com) for evidence-based support, advice, and resources.

## References

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